

## Claims:

1. The use of a buffer based on malic acid for producing a pharmaceutical preparation which can be administered nasally -  
5 having substantially improved ciliary tolerability - and is based on an at least partly aqueous solution, emulsion or the like which comprises at least one mucosally absorbable and/or locally acting active pharmaceutical ingredient known per se, at least one preservative formed by benzalkonium chloride  
10 alone or together with other preservative substances, at least one buffer which keeps the pH at 4 to 6 or at about 5, and in addition at least one osmotic agent and/or at least one wetting agent and with the proviso that the buffer based on malic acid is employed instead of a buffer previously employed  
15 in the pharmaceutical preparation and based on citrate(s), phosphate(s) and/or acetate(s) - partly or completely replacing it (them) - while otherwise retaining the composition, concentration and amount ratios intended for the particular pharmaceutical preparation.  
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2. The use of a buffer based on malic acid as claimed in claim 1, with the proviso that the malic acid buffer is present therein in a concentration in the range from 1 to 5 mM/l, in each case based on the complete pharmaceutical  
25 preparation, for the purpose mentioned in claim 1.
3. The use of a buffer based on malic acid as claimed in claim 1 or 2, with the proviso that the malic acid buffer is formed with sodium as counter ion, for the purpose mentioned  
30 in claim 1.
4. The use of a buffer based on malic acid as claimed in any of claims 1 to 3, with the proviso that the preparation

comprises sodium chloride as osmotic agent, for the purpose mentioned in claim 1.

5. The use of a buffer based on malic acid as claimed in any  
5 of claims 1 to 4, with the proviso that the preparation comprises

- at least one allergy remedy such as, for example, levocabastine, azelastine or cromoglicic acid,
- at least one sympathomimetic or nasal catarrh remedy such  
10 as, for example, xylometazoline, tetrazoline, indanazoline, phenylephrine, naphazoline, tramazoline, oxymetazoline,
- at least one corticoid such as, for example, beclometasone or triamcinolone, and/or
- at least one peptide or hormone such as, for example,  
15 calcitonin, desmopressin, gonadorelin, buserelin, nafarelin or oxytocin,

as active ingredient(s), for the purpose mentioned in claim 1.

6. The use of a buffer based on malic acid in an at least  
20 partly aqueous solution, emulsion or the like which comprises at least one mucosally absorbable and/or locally acting active pharmaceutical ingredient known per se, at least one preservative formed by benzalkonium chloride alone or together with other preservative substances, at least one buffer which  
25 keeps the pH at 4 to 6 or at about 5, and in addition preferably at least one osmotic agent and/or at least one wetting agent and which forms the basis for a pharmaceutical preparation which can be administered nasally as replacement for the buffers present in previously known solutions,  
30 emulsions or the like intended for such preparations and based on citrate(s), phosphate(s) and/or acetate(s) for the purpose of preparing such a pharmaceutical preparation which can be administered nasally and has a substantially improved ciliary tolerability.

7. The use of a malic acid buffer with the proviso or with the provisos

- that it is formed with sodium as counter ion and/or
- that it is employed in a concentration in the range

5 from 1 to 5 mM/l, based on the total amount of the pharmaceutical preparation, and/or

- that it is employed together with sodium chloride as osmotic agent, for the purpose indicated in claim 6.

10 8. The use of a malic acid buffer with the proviso that it is employed together with

- at least one allergy remedy such as, for example, levocabastine, azelastine or cromoglicic acid,

15 as, for example, xylometazoline, tetrazoline, indanazoline, phenylephrine, naphazoline, tramazoline, oxymetazoline,

- at least one corticoid such as, for example, beclometasone or triamcinolone, and/or

20 - at least one peptide or hormone such as, for example, calcitonin, desmopressin, gonadorelin, buserelin, nafarelin or oxytocin,

for the purpose indicated in claim 6, where appropriate taking account of at least one of the provisos of claim 7.

25 9. A process for producing a pharmaceutical preparation which can be administered nasally and is based on an at least partly aqueous solution, emulsion or the like which comprises at least one mucosally absorbable and/or locally acting active pharmaceutical ingredient known per se, at least one

30 preservative formed by benzalkonium chloride alone or together with other preservative substances, at least one buffer which keeps the pH at 4 to 6 or at about 5, and in addition at least one osmotic agent and/or at least one wetting agent for the use as claimed in any of claims 1 to 8, characterized in that

to obtain such a preparation with substantially improved ciliary tolerability

- a buffer based on malic acid is employed in the preparation of the solution, emulsion or the like underlying the preparation, a buffer based on malic acid is present instead of a buffer which has been employed to date in the preparation and is based on citrate(s), phosphate(s) and/or acetate(s) - partly or completely replacing it (them) - while retaining the composition, concentration and amount ratios, intended in each case for the pharmaceutical preparation, of active ingredient(s), preservative(s), in particular benzalkonium chloride, and osmotic agent(s) and wetting agent(s).

10. The process as claimed in claim 9, characterized in that

- a malic acid buffer which is formed with sodium as counter ion is employed, and/or

- the malic acid buffer is employed in a concentration in the range from 1 to 5 mM/l, in each case based on the complete pharmaceutical preparation, and/or
- sodium chloride is employed as osmotic agent.

11. The process as claimed in claim 9 or 10, characterized in that the pharmaceutical preparation is produced with the use of

- at least one allergy remedy such as, for example, levocabastine, azelastine or cromoglicic acid,
- at least one sympathomimetic or nasal catarrh remedy such as, for example, xylometazoline, tetrazoline, indanazoline, phenylephrine, naphazoline, tramazoline or oxymetazoline,
- at least one corticoid such as, for example, beclometasone or triamcinolone, and/or
- at least one peptide or hormone such as, for example, calcitonin, desmopressin,

as active ingredient(s).

12. A pharmaceutical preparation which can be administered nasally and is based on an aqueous solution, emulsion or the like which comprises at least one mucosally absorbable and/or locally acting active pharmaceutical ingredient known per se, at least one preservative formed by benzalkonium chloride alone or together with other preservative substances, at least one buffer which keeps the pH at 4 to 6 or at about 5, and in addition at least one osmotic agent and/or at least one wetting agent and which is characterized in that the preparation has a substantially improved ciliary tolerability owing to the fact that in the solution, emulsion or the like, or in the one underlying it, a buffer based on malic acid is present instead of a buffer which has been employed to date in the pharmaceutical preparation and is based on citrate(s), phosphate(s) and/or acetate(s) - partly or completely replacing it (them) - while retaining the composition, concentration and amount ratios, intended in each case for the pharmaceutical preparation, of active ingredient(s), preservative(s), osmotic agent(s) and wetting agent(s).

13. The preparation as claimed in claim 12, characterized in that the malic acid buffer is present therein in a concentration in the range from 1 to 5 mM/l, in each case based on the complete pharmaceutical preparation.

14. The preparation as claimed in claim 12 or 13, characterized in that the malic acid buffer is formed with sodium as counter ion.

15. The preparation as claimed in any of claims 12 to 14, characterized in that it comprises sodium chloride as osmotic agent.

16. The preparation as claimed in any of claims 12 to 15, characterized in that it comprises

- at least one allergy remedy such as, for example, levocabastine, azelastine or cromoglicic acid,

5 - at least one sympathomimetic or nasal catarrh remedy such as, for example, xylometazoline, tetrazoline, indanazoline, phenylephrine, naphazoline, tramazoline, oxymetazoline,

- at least one corticoid such as, for example, beclometasone or triamcinolone, and/or

10 - at least one peptide or hormone such as, for example, calcitonin, desmopressin, gonadorelin, buserelin, nafarelin or oxytocin,  
as active ingredient(s).